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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/084,643 | 02/26/2002 | Vinod Asundi | 21272-502 | 1038 |
| 7590 | 07/20/2006 | | EXAMINER | |
| Petrina S. Hsi HYSEQ, INC. 670 Almanor Avenue Sunnyvale, CA 94085 | | | ZHOU, SHUBO | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1631 | |

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/084,643 | ASUNDI ET AL. | |
| | Examiner Shubo (Joe) Zhou | Art Unit 1631 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 10,11 and 20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) ____ is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) 10-11 and 20 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Raw Sequence Listing Error Report.

DETAILED ACTION

Restriction/Election Requirement

The claims of this application have been amended in a preliminary amendment filed 9/18/02. Claims 10-11 and 20 are currently pending.

Independent claim 10 is drawn to an isolated “polypeptide encoded by the polynucleotide of 785 SEQ ID NO:2715,” and independent claim 20 is drawn to a “polypeptide encoded by the polynucleotide comprising a nucleic acid sequence which is 95% identical to the nucleic acid sequence of 785 SEQ ID NO:2715.”

The claim language is confusing as to what is meant by “785 SEQ ID NO:2715,” but it appears that multiple sequences are claimed.

The MPEP 803.04 states:

Nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another. These sequences are thus deemed to normally constitute independent and distinct inventions with the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such nucleotide sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq. Examination will be restricted to only the elected sequence.

Since the claims are drawn to polypeptides, applicants must elect a single amino acid sequence and/or a single polynucleotide sequence that encodes the polypeptide sequence.

Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR § 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Sequence Rule Compliance

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR § 1.821 through 1.825 because the computer readable form (CRF) of the sequence listing is defective. See the attached "Raw Sequence Listing Error Report." A new CRF and a statement under 37 CFR 1.821(f) are required. Applicants are given the same response time regarding this failure to comply as that set forth to respond to this Office action. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully respond to this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shubo (Joe) Zhou, whose telephone number is 571-272-0724. The examiner can normally be reached Monday-Friday from 8 A.M. to 4 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is

(866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Shubo (Joe) Zhou, Ph.D.
Patent Examiner



744-03-03
BIOTECHNOLOGY
SYSTEMS
BRANCH



RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/084,643B
Source: OIPR
Date Processed by STIC: 7/18/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name,
Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two,
2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office,
Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 04/24/2003



OIPE

RAW SEQUENCE LISTING
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 7 Asundi, Vinod
 8 Drmanac, Radoje T.
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 14 <130> FILE REFERENCE: 21272-502
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 17 <141> CURRENT FILING DATE: 2002-02-26
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 69 <151> PRIOR FILING DATE: 2000-03-07
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 72 <151> PRIOR FILING DATE: 2000-02-28

Does Not Comply
Corrected Diskette Needed

ppr 2-4,6,9-13

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| 4951747 | TGTGCCCGAC CTTATCCTCA ATTtTCTAAG CATAAGGATT TAAGAGTTAG TGGAAAGCA | 660 |
| 4951748 | TGACTACGGT TAAAAGAAC CTGGTCAGCT GAAGCAGTCC CACTTGGCC ATTCCAGTAC | 720 |
| 4951749 | ACTTCCCTAC TCTCGTTCA TGGAGAAGAC CGTCTACTGA CAAGAGAATC CATCCCTTT | 780 |
| 4951750 | GCACACAGTG GTCACCTGAC AGCTCAGAGG TCAACTTCTT GTTTTGAGG AAAAATTCAA | 840 |
| 4951751 | AAGGCTGCAC GTTAAAGGA GTTGTCCAT TTCAGTGCCTC CATTAGCCTG TCTTCCTCA | 900 |
| 4951752 | GAATTATTAC AATCTTTGA TGTGATAAGC ACCAAACTAT GAAGCTTTT CTTTCTCTC | 960 |
| 4951753 | CCCGCTGCTC CGTTCTGTGA ACCGACTTT TGTCTACAT CACACTGATT TCTTCAGTGT | 1020 |
| E--> 4951754 | TTGCTCTGAA ACTTCACGAA TTCCACCGCA CTGGACTACG CTTGTCAGAA GTTTACCAAGT | 1080 |
| 4951755 | CTCTTGATGT GATAAGCACC AAACATATGAA GCTTTCCCT CCTCTCTCCC GCTGCTCCGT | 1140 |
| 4951756 | TCTGTGAAAC GACTTTTGT CTACAATCAC ACTGATTCT TCACTGTGTTG CTCTGAAACT | 1200 |
| 4951757 | TCACTTTTC TGAGTGTGTTG GTTCTGTCAA ATAGGCTAAA ATAAAATACA GTATCTGCTT | 1260 |
| 4951758 | ACAGGTAATA TACGGAACAA TAACAAGGGA CTGAAGGTAC AAAACACACAA CGGACATTAT | 1320 |
| 4951759 | GGTCATATAC AATATATAGA AGTACCTAAC GTTAACAATT TTATGTAAGA AGTTCACAT | 1380 |
| 4951760 | TTGCTATT TTAAAGCA TTCCCCACCA TTTTTTCA TCTGTAGATC CTCTGCAGTT | 1440 |
| 4951761 | AAGATTGAGC ACCCCCCCGC AACCTTTTTT TTGATACAG AGCCTCGCTC TGTCACTCAA | 1500 |
| 4951762 | GGCTGGAGTG CCAGTGGCAT GATCTTAGCT CACTGCAACC TCCGCCTCGC AGGTTCAAGC | 1560 |
| 4951763 | CATTCTCCTG CCTCAAAGGG CTTCTCTCT GGCATGGATT CTGTGATGCA AAGTGGAGGT | 1620 |
| 4951764 | GGAGCTGCAGG GTGAAGGCCT TGCCACACTT AGTGCACCTG TAGGGCTTT CTGAGTGTG | 1680 |
| 4951765 | AATTCTCCGA TGCAAAATCA GGTATGAGTT TCGGTTGAAA GCTTTCCAC ATTCACTAC | 1739 |
| 4951793 | <210> SEQ ID NO: 147913 | |
| 4951794 | <211> LENGTH: 11027 | |

invalid
for use
in the
sequence
itself.

Use "n" and
explain in
L2207-L2237
response

d is
valid;
f is
invalid

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:23

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

4957195 <212> TYPE: DNA
 4957196 <213> ORGANISM: Homo sapiens
 4957198 <220> FEATURE:
 4957199 <221> NAME/KEY: misc_feature
 4957200 <222> LOCATION: (1)...(11027)
 4957201 <223> OTHER INFORMATION: n = a,t,c or g
 4957207 <400> SEQUENCE: 147913
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 4957209 acctctgaag aagatagttt ttcatatgt tttcttaat gtagaacaaa aaatctacaa 120
 4957210 aaagtaagaa ctagcaagac tagaaaaaaa atttccatg aagcaaacgc tgatgaatgt 180
 4957211 gaaaaatcta aaaaccaagt gaaagaaaaa tactcattt tactgaagt ggaaccaa 240
 4957212 gatactgatc cattagattc aaatgttagca aatcagaagc ccttgagag tggaaatgac 300
 4957213 aaaatctcca aggaaggtgt accgtcttt gcctgtgaat ggtctcaact aacccttca 360
 4957214 ggtctaaatg gagcccagat ggagaaaaata cccctatttc atatttcttc atgtgacca 420
 4957215 aatatttcag aaaaagacctt attagacaca gagaacaaaa gaaagaaaaga ttttcttact 480
 4957216 tcagagaatt ctgtccacg tatttcttagc ctacaaaaat cagagaagcc attaaatgag 540
 4957217 gaaacagtgg taaataagag agatgaagag cagcatctt aatctcatac agactgcatt 600
 4957218 ctgcgttaa agcaggcaat atctggact tctccagtgg ctcttcatt tcagggtatc 660
 4957219 aaaaagtcta tattcagaat aagagaatca cctaaagaga ctttcaatgc aagttttca 720
 4957220 ggtcatatga ctgatccaaa cttaaaaaaa gaaactgaag cctctgaaag tggactgaa 780
 4957221 atacatactg ttgtctcaca gaaggaggac tccttatgtc caaatttat tgataatgga 840
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 4957223 actttgaaaa agaaaacaaa taagtttt tatgtatac atgtgaaac atcttataaa 960
 4957224 gaaaaaaa taccgaaaaga cccaaaatca gaactaatta actgttcagc ccagttgaa 1020
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 4957231 caacattcaa aagtggata cagtgtact gactttcaat cccagaaaag tcttttat 1440
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 4957233 ctatgtatgtat tttcttaggg caaagaatca tacaatgtt cagacaagct caaaggtaac 1560
 4957234 aattatgtat ctgtatgtt attaacaaa aatattccca tggaaaagaa tcaagatgt 1620
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 4957239 gctttagaa atactaagga acttcatgaa acagacttga ctgtgtaaa cgaacccatt 1920
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 4957241 tcaattaaaa aagatttgtt ttatgttctt gcagaggaga acaaaaatag tgtaaagcag 2040
 4957242 cataaaaaaa tgactctagg tcaagatttta aatcgacca tctccttggat tataatgtt 2100
 4957243 ataccagaaaa aaaataatgtt ttacatgaaac aatggggcag gactcttagg tccaaattca 2160
 4957244 aatcacagtt ttggaggtag cttcagaaca gcttcaaata agggaaatcaa gctctgtgg 2220
 4957245 cataacatta agaagagcaa aatgttcttca aagatattt aagaacaata tcctactgt 2280
 4957246 ttatgttggat ttgaaattgtt aaataccattt gcattagata atcaaaagaa actgagcaag 2340
 4957247 cctcagtcaa ttaatactgtt atctgcacat ttacagagta gtgttagttgt ttctgtattgt 2400
 4957248 aaaaatagtc atataacccc tcaatgttta tttccaagc aggatttaa ttcaaaccat 2460
 4957249 aatttaacac ctagccaaaaa ggagccaaattt acagaactttt ctactatattt agaagatca 2520

f.b

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003

TIME: 15:59:23

Input Set : E:\pt SEQ.502.txt

Output Set: N:\CRF4\07182003\J084643B.raw

RAW SEQUENCE LISTING DATE: 07/18/2003
PATENT APPLICATION: US/10/084,643B **TIME:** 15:59:23

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/084.643B

DATE: 07/18/2003

TIME: 15:59:23

Input Set : E:\pt SEQ.502.txt

Output Set: N:\CRF4\07182003\J084643B.raw

| | | | | | | | |
|---------|-------------|--------------|--------------|--------------|--------------|-------------|-------|
| 4957348 | aagatactta | ttaaggtaac | agtagcatgt | ctaacagcta | ttcctaccat | tctgatgagg | 8460 |
| 4957349 | tatataatga | ttcaggatat | ctctcaaaaa | ataaaacttga | ttctggatt | gagccagtat | 8520 |
| 4957350 | tgaagaatgt | tgaagatcaa | aaaacacta | gttttccaa | agtaatatcc | aatgtaaaag | 8580 |
| 4957351 | atgcaaatgc | atacccacaa | actgttaatg | aagatatttgc | cgttgaggaa | cttgtgacta | 8640 |
| 4957352 | gctttcacc | ctgcaaaaat | aaaatgcag | ccattaaattt | gtccatatct | aatagtaata | 8700 |
| 4957353 | attttgaggt | agggccacct | gcatttaga | tagccagtgg | taaaatcggt | tgtgttcac | 8760 |
| 4957354 | atgaaacaat | taaaaaagtg | aaagacatata | ttacagacag | tttcagtaaa | gtaattaagg | 8820 |
| 4957355 | aaaacaacga | gaataaatca | aaaatttgc | aaacgaaaat | tatggcaggt | tgttacgagg | 8880 |
| 4957356 | cattggatga | ttcagaggat | attcttcata | actctctaga | taatgtgaa | tgtgcacgc | 8940 |
| 4957357 | attcacataa | ggttttgtct | gacattcaga | gtgaagaaaat | tttacaacat | aacccaaaata | 9000 |
| 4957358 | tgtctggatt | ggagaaagt | tctaaaatata | cacccgttgc | tgttagtttgc | gaaacttcag | 9060 |
| 4957359 | atatatgtaa | atgtgtata | gggaagcttc | ataagtca | ctcatctgca | aatacttgc | 9120 |
| 4957360 | ggatttttag | cacagcaagt | ggaaaatctg | tccaggtatc | agatgcttca | ttacaaaacg | 9180 |
| 4957361 | caagacaagt | gttttctgaa | atagaagata | gtaccaagca | agtctttcc | aaagtattgt | 9240 |
| 4957362 | ttaaaagtaa | cgaacattca | gaccagctca | caagagaaga | aaatactgct | atacgactc | 9300 |
| 4957363 | cagaacattt | aatatccaa | aaaggctttt | catataatgt | ggtaaattca | tctgctttct | 9360 |
| 4957364 | ctggatttag | tacagcaagt | ggaaagcaag | tttccatttt | agaaaagtcc | ttacacaaaag | 9420 |
| 4957365 | ttaaggggat | gttagagggaa | tttgatttta | tcagaactga | gcatagtctt | cactattcac | 9480 |
| 4957366 | ctacgtctag | acaaaatgt | tcaaaaatac | ttccctgtgt | tgataagaga | aacccagagc | 9540 |
| 4957367 | actgttaaa | ctcagaaatg | aaaaaaacct | gcagtaaaga | attnaattta | tcaaataact | 9600 |
| 4957368 | taaatgttga | aggtggttct | tcagaaaata | atcactctat | taaagtttct | ccatatctct | 9660 |
| 4957369 | ctcaatttca | acaagacaaa | caacagttgg | tatttaggaac | caaagtctca | cttggtgaga | 9720 |
| 4957370 | acattcatgt | tttgggaaaa | gaacaggctt | cacctaaaaa | cgtaaaaatg | gaaattggta | 9780 |
| 4957371 | aaactgaaac | ttttctgtat | gttcctgtga | aaacaaaat | agaagtttgc | tctacttact | 9840 |
| 4957372 | ccaaagattc | agaaaaactac | tttgaaacag | aagcagtaga | aattgtctaa | gttttatgg | 9900 |
| 4957373 | aagatgtat | actgacagat | tctaaactgc | caagtcatgc | cacacattct | cttttacat | 9960 |
| 4957374 | gtccccaaaa | tgaggaaaatg | ttttgtcaa | attcaagaat | tggaaaaaga | agaggagagc | 10020 |
| 4957375 | cccttatctt | atgtggagaa | ccctcaatca | aaagaaaactt | attnaattgaa | tttgacagga | 10080 |
| 4957376 | taatagaaaa | tcaagaaaaaa | tccttaaagg | cttcaaaaag | cactccagat | ggcacaataa | 10140 |
| 4957377 | aagatcgaag | atgtttgt | catcatgttt | ctttagagcc | gattacctgt | gtacccttcc | 10200 |
| 4957378 | gcacaactaa | ggaacgtcaa | gagatacaga | atccaaattt | taccgcaccc | ggtcaagaat | 10260 |
| 4957379 | ttctgtctaa | atctcatttgc | tatgaacatc | tgactttgg | aaaatcttca | agcaatttag | 10320 |
| 4957380 | cagtttcagg | acatccattt | tatcaagttt | ctggtaacaa | gaatggaaaa | atgagaaaaat | 10380 |
| 4957381 | tgattactac | aggcagacca | acccaaatgt | tttgcacc | ttttaaaact | aatcacatt | 10440 |
| 4957382 | ttcacagagt | tgaacagtttgc | tttgcaccc | tttgcaccc | tttgcaccc | tttgcaccc | 10500 |
| 4957383 | acattgtatgg | acatggctct | gatgatagta | aaaataagat | taatgtaca | gagattcatc | 10560 |
| 4957384 | agtttaacaa | aaacaactcc | aatcaagcag | cagctgttac | tttcacaaag | tgtgaagaag | 10620 |
| 4957385 | aacctttaga | ttaatttaca | agtcttcaga | atgccagaga | tatacaggat | atgcgaatta | 10680 |
| 4957386 | agaagaaaaca | aaggcaacgc | gtcttccac | agccaggcag | tctgtatctt | gcaaaaacat | 10740 |
| 4957387 | ccactctgcc | tcaaatctct | ctgaaagcag | cagtaggggg | ccaagttccc | tctgcgtgtt | 10800 |
| 4957388 | ctcataaaaca | gctgtatacg | tatggcggtt | ctaaacatttgc | cataaaaaatt | aacagcaaaa | 10860 |
| 4957389 | atgcagagtc | tttcagtttgc | cacactgaag | attatgttgg | taaggaaagt | ttatggactg | 10920 |
| 4957390 | aaaaaggaat | acagttggct | gatgggttt | ggctcataacc | ctccaaatgtat | ggaaaggctg | 10980 |
| 4957391 | aaaaagaaga | attttatagg | gctctgtgt | acgtaaaggc | cacatacg | | 11027 |
| 4983741 | <210> | SEQ ID NO: | 148559 | | | | |
| 4983742 | <211> | LENGTH: | 1364 | | | | |
| 4983743 | <212> | TYPE: | DNA | | | | |
| 4983744 | <213> | ORGANISM: | Homo sapiens | | | | |
| 4983750 | <400> | SEQUENCE: | 148559 | | | | |

P. 9

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:25

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

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| 4983751 | acccagccag cacagcagca gcagccttgc ctctatgaga tcaaacagt tctggagtgt | 60 |
| 4983752 | gcccgagaacc agggtgacat caagctctgt gagggtttca atgaggtgct gaaacagtgc | 120 |
| 4983753 | cgaacttgc aa acggattggc ctaatgaaga agttcaacct ggagagatgg aaaatcaact | 180 |
| 4983754 | ctcataacta agttaattta gtataaaaat agaatttgata gtgagggtat gcagccttgc | 240 |
| 4983755 | ctctatgaga tcaaacagt tctggagtgt gcccagaacc agggtgacat caagctctgt | 300 |
| 4983756 | gagggtttca atgaggtgct gaaacagtgc cgaacttgc aa acggattggc ctaatgaaga | 360 |
| 4983757 | agttcaacct ggagagatgg aaaatcaacta agttaattta gtataaaaat | 420 |
| 4983758 | tagaatttgat agtgagggtt ataaaatggg aaccatcagt taaacctctc cctgtcattc | 480 |
| 4983759 | cctagcttcc cttgcttcag aattttaaaat gaaagtgggg gtgtccctac tctgttagaat | 540 |
| 4983760 | ctgggactgg gcaaatgtt gtgtggcctc cttaaactag ctgttatgtt atgattttat | 600 |
| 4983761 | tctttgttaag ttaatttagaa taaagtctt ttcttccaaa ctcaggaaa cccagccag | 660 |
| 4983762 | caccagccag cagccagcct tgccctctat gagatccaaa ccagtttccct gggagtgtgc | 720 |
| 4983763 | ccccagaacc aggggtgaca tccaagcccc tgtgagggtt tccaatgagg tgcctgaaac | 780 |
| 4983764 | agtggccgac tttgcaaaccc ggatttgccct aatgaagaag tttcaaccct ggagagatgg | 840 |
| 4983765 | aaaatcaacta ctcataacta agttaattta gtataaaaat tagaatttgat agtgagggtt | 900 |
| 4983766 | ataaaatggg aaccatcagg ttaaacctctc ccctgtcatt ccctagcttc cttgtcttcg | 960 |
| 4983767 | agaattgaaa ttgaaatgtt ggggtgtccc tactctgttag aatctgggac ttgggcaaat | 1020 |
| 4983768 | gttttgtgtg gcctccctaa actagctgtt atgttatgtat ttttattttt tttgagttaa | 1080 |
| E--> 4983769 | tttagacacaa agtcattttc ttccaaaaaa aaaaagctct cataactaag ttaatttttagt | 1140 |
| 4983770 | ataaaaatag aatttgatgt gagggtataa agtgtaacca tcagttaaac ctctcctgtc | 1200 |
| 4983771 | attccttagct tccttgcttc agaattgaaa ttgaaatgtt ggggtgtccc tactctgttag | 1260 |
| 4983772 | aatctgggac tgggcaaatg ttgtgtqgg ctccctaaac tagctgttaa gttatgattt | 1320 |
| 4983773 | taatctttgtt gagtttaataa gataaagtcc tttcttccaaa aaaa | 1364 |
| 5004829 | <210> SEQ ID NO: 149073 | |
| 5004830 | <211> LENGTH: 2353 | |
| 5004831 | <212> TYPE: DNA | |
| 5004832 | <213> ORGANISM: Homo sapiens | |
| 5004834 | <220> FEATURE: | |
| 5004835 | <221> NAME/KEY: misc_feature | |
| 5004836 | <222> LOCATION: (1)...(2353) | |
| 5004837 | <223> OTHER INFORMATION: n = a,t,c or g | |
| 5004843 | <400> SEQUENCE: 149073 | |
| 5004844 | atggccgtca tggcgcggcc aaccctcgct ctgtactct cggggccct gcccctgacc | 60 |
| 5004845 | cagacctggg cgggctccca ctccatgagg tatttttaca cttccgtgtc cccggccggc | 120 |
| 5004846 | cgcggggagc cccgcttcat cggcgtggc tacgtggacg acacgcgtt cgtgcgggtt | 180 |
| 5004847 | gacagcgacg cccgagccaa gaggatggag cccggggcgc cgtggataga gcaggagggg | 240 |
| 5004848 | ccggagttt gggaccggaa cacacggat gtgaaggccc agtcacagac tgaccgagt | 300 |
| 5004849 | gaccctgggaa ccctgcgcgg ctactacaac cagagcgagg cccgttctca caccatccag | 360 |
| 5004850 | atgatgtatg gctgcgacgt ggggtcgac gggcgcttcc tccgcgggtt cccggcaggac | 420 |
| 5004851 | gcttacgcacg gcaaggattt catcgccctg aaagaggacc tgcgtctttt gaccgcggcg | 480 |
| 5004852 | gacatggcag ctcagaccac caagcacaag tgggaggcgg cccatgtggc ggagcagtgg | 540 |
| 5004853 | agagcctacc tggaggccac gtgcgtggag tggctccgca gatacctgga gaacggaaag | 600 |
| 5004854 | gagacgctgc agcgcacccaa cggcccccacca acgcatatga ctaccacgc tgcgtctgc | 660 |
| 5004855 | catgaagccaa ccctggggatg ctggggccctg agttctacc ctgcggagat cacactgacc | 720 |
| 5004856 | tggcagcggg atggggagga ccagacccag gacacggagc tcgtggagac caggcctgca | 780 |
| 5004857 | ggggatggaa cttccagaa gtgggtggct gtgggtggc cttctggaca ggagcagaga | 840 |
| 5004858 | tacacctgcc atgtgcagca tgagggtttt cccaaatgggg tcaccctgat atggggagccg | 900 |
| 5004859 | tcttcccagc ccaccatccc catcgccggc atcattgtgt gcctgggttct cttggagct | 960 |
| 5004860 | gtgtatcactg gagctgtgtt cgctgtgtt atgtggagga ggaagagctc agatagaaaa | 1020 |

P/O

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:26

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

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| E--> 5004862 | rosapliensg tcatggcgcc ccegaaccctc gtcctgtac tctcggggggc tctggccctca | 1140 | → |
| 5004863 | accagacact gggcgggctc teactccatg aggtatttct tcacatccgt gtccccggcc | 1200 | |
| 5004864 | ggccgcgggg agcccccgtt catcgagt ggcacgtgg acgacacgc gttcggtcg | 1260 | |
| 5004865 | tccgacagcg acgcccgcgag ccagaggatg gagccgcggg cgccgtggat agagcaggag | 1320 | |
| 5004866 | ggtcggaggt attggacgg ggagacacgg aaagtgaagg cccactcaca gactcaccca | 1380 | |
| 5004867 | gtggacctgg ggacctcgcg cgctactac aaccagagcg agggcggttc tcacaccgtc | 1440 | |
| 5004868 | cagaggatgt atggctcgca ctgtgggtcg gactggcgct tcctccgcgg gtaccaccag | 1500 | |
| 5004869 | tacgcctacg acggcaagga ttacatcgcc ctgaaagagg acctgcgtc ttggaccgcg | 1560 | |
| 5004870 | gcccgcacatgg cagctcagac caccaagcac aagtggagg cggccatga ggcggagcag | 1620 | |
| 5004871 | tttagagaccc acctggaggg cacgtgcgtg gagtggtcc gcagatacc ggagaacggg | 1680 | |
| 5004872 | aaggagacgc tgcagcgcac ggacgccccca aaaacgcata tgactcacca cgctgtctct | 1740 | |
| 5004873 | gaccatgaag ccaccctgag gtgctggcc ctgagttt acctgcggg gatcacactg | 1800 | |
| 5004874 | acctggcagc gggatgggg gggatgggg cggacacacgg agtcgtggg gaccaggcct | 1860 | |
| 5004875 | gcaggggatg gaaccttcca gaagtggcg gctgtgggg tgcctctgg acaggagcag | 1920 | |
| 5004876 | agatacacct gccatgtcga gcatgggggt ttgccaagc ccctcaccct gagatgggg | 1980 | |
| 5004877 | ccgtcttccc agcccaccat cccatcggt ggcattattt ctggctggg tctctttgg | 2040 | |
| 5004878 | gctgtatca ctggagctgt ggtcgtgtc gtgatgtggg ggagggagag ctcagataga | 2100 | |
| 5004879 | aaaggaggga gctactctca ggctgcaagc agtgacagt cccaggcgtc tggatgtgtct | 2160 | |
| 5004880 | ctcacagctt gtaaaagtgtg agacagctc cttgtgtggg actgagaggg aagagtgtt | 2220 | |
| 5004881 | cctgccttc cctttgtgac ttgaagaacc ctgactttt ttctgcggg gcacctgcatt | 2280 | |
| 5004882 | gtgtctgtgt tcgtgttaggc ataatgtgag gaggtgggg gaccacccca ccccatgtc | 2340 | |
| 5004883 | caccatgacc ctc | 2353 | |
| 5005977 | <210> SEQ ID NO: 149104 | | |
| 5005978 | <211> LENGTH: 2615 | | |
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| 5005980 | <213> ORGANISM: Homo sapiens | | |
| 5005982 | <220> FEATURE: | | |
| 5005983 | <221> NAME/KEY: misc_feature | | |
| 5005984 | <222> LOCATION: (1)...(2615) | | |
| 5005985 | <223> OTHER INFORMATION: n = a,t,c or g | | |
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| 5005993 | cagacctggg cgggctccca ctccatgagg tatttctaca cttccgtgtc cggggccggc | 120 | |
| 5005994 | cgcggggagc cccgttcat cggccgtggc tacgtggacg acacgcgtt cgtcggttc | 180 | |
| 5005995 | gacagcgtcg cccgtggcc gaggatggag cggccggcgt cgtggataga gcaggagggg | 240 | |
| 5005996 | ccggagtatt gggaccggaa cacacggat gtgaaggccc actcacagac tgaccgagtg | 300 | |
| 5005997 | gaccctgggg ccctgcgtgg ctactacaac cagacgtgg cccgttctca caccatccag | 360 | |
| 5005998 | atgatgtatg gtcgcgtacgt ggggtcgac gggcgcttcc tccgcgggtt cggcggagac | 420 | |
| 5005999 | gcctacgacg gcaaggattt catcgccctg aaagaggacc tgcgtcttg gaccgcggcg | 480 | |
| 5006000 | gacatggcag ctcagaccac caagcacaag tggggggccg cccatgtggc ggacgtgg | 540 | |
| 5006001 | agagcctacc tggaggggc acgtcggtgg tggctccca gatacctgg gaaacggaaag | 600 | |
| 5006002 | gagacgtcg acgcgtcgcc cggcccccac acgcataatga ctcaccacgc tggctctgac | 660 | |
| 5006003 | catgaagccca ccctgggggtt ctggggccctg agcttctacc ctgcggagat cacactgacc | 720 | |
| 5006004 | tggcagcgccg atggggagga ccagacccag gacacggacg tcgtggagac caggcgtca | 780 | |
| 5006005 | ggggatggaa cttccagaa gtgggtggct gtgggtggc cttctggaca ggacgtggaaa | 840 | |
| 5006006 | tacacctgcc atgtgcgtca tgagggtttt cccaaaccccc tcaccctgat atggggggccg | 900 | |
| 5006007 | tcttcccagc ccaccatccc catcgccggc atcattgtgt gcctgggttct ctttggagct | 960 | |
| 5006008 | gtgtatctgtc gagctgtgtt cgctgtgtt atgtggaggg ggaagagctc agatagaaaa | 1020 | |

R II

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:26

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

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| E--> 5006009 | ggagggagct acttcaggc tgcaagca | gacagtgc | ccc agggtctga tttgtcttla | 1080 |
| E--> 5006010 | naadeccom pletecdsle nhrosapie | nsatggccgt | catggcgccc cgaaccctcc | 1140 |
| 5006011 | tctgtact ctggggggcc ctggccctga | cccacac | ctg ggggtcc cactccatga | 1200 |
| 5006012 | gttattttt cacatccgtg tcccgcccc | gca | gtggaga gccccgttc atcgactgg | 1260 |
| 5006013 | gtacgtgga cgacacgca | ttcgtgcgtt | tcgacagcga cgccgcgagc cagaggatgg | 1320 |
| 5006014 | agccgcgggc gccgtggata gacgaggaga | ggcctgagta | ttgggaccag gagacacgga | 1380 |
| 5006015 | atgtgaaggc ccagtacacag actgaccgag | tggac | ctgggggac gacccctgcgc ggctactaca | 1440 |
| 5006016 | accagagcga ggcgggttct cacaccatcc | agataatgt | aatggctgcac gtgggggtcg | 1500 |
| 5006017 | acgggcgtt cctccgcggg tatgaacagc | acgcctac | gccaaggat tacatcgccc | 1560 |
| 5006018 | tgaacgagga cctgcgtct tggaccgcgg | cggacat | ggctcagatc acccagcgc | 1620 |
| 5006019 | atggggagc ggcgggttgg gcggagcgt | tgagagccta | cctggagggc acgtgcgtt | 1680 |
| 5006020 | atggctccg cagataacctg gagaacggga | aggagacgt | gcagcgcacg gacccccc | 1740 |
| 5006021 | agacacatat gacccaccac cccatctctg | accatgaggc | caccctgagg tgctggccc | 1800 |
| 5006022 | tggcttcta ccctgcggag atcacactga | cctggcagc | ggatggggag gaccagaccc | 1860 |
| 5006023 | agacacgga gctcgtggag accaggcctg | caggggatgg | aaccttccag aagtggccgg | 1920 |
| 5006024 | ctgtgggtt gccttctgga gaggagcaga | gatacac | ctgtgcacg catgagggtc | 1980 |
| 5006025 | tgcggaaagcc cctcaccctg agatggggc | tgttttcca | gcccaccat cccatcg | 2040 |
| 5006026 | gcatcattgc tggcctgggtt ctccctggag | ctgtgatc | tggagctgtg gtcgctgcc | 2100 |
| 5006027 | tgtatgtggag gaggaagagc tcagatagaa | aacggac | ccccaaaacg catatgactc | 2160 |
| 5006028 | accacgctgt ctctgaccat gaagccaccc | tgaggtgt | ggccctgagc ttctaccctg | 2220 |
| 5006029 | cggagatcac actgactgg cagcggatg | gggaggacca | gaccaggac acggagctcg | 2280 |
| 5006030 | tggagaccag gcctqaaggg gatggAACCT | tccagaatg | ggggctgtg gtgggcctt | 2340 |
| 5006031 | ctggacagga gcagagatac acctgcctg | tgcagcat | gggttgc aagccctca | 2400 |
| 5006032 | ccctgagatg ggagccgtt tcccagccca | ccatccccat | cgtggcattc attgctggcc | 2460 |
| 5006033 | tgttctctt tggagctgtg atcaactggag | ctgtggcgc | tgctgtatg tggaggagga | 2520 |
| 5006034 | agagctcaga tagaaaagga gggagctact | ctcaggctgc | aagcgtgac agtgc | 2580 |
| 5006035 | gctctgatgt gtctctcaca gctttaaag tgtga | | | 2615 |
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| 5006084 | <211> LENGTH: 3104 | | | |
| 5006085 | <212> TYPE: DNA | | | |
| 5006086 | <213> ORGANISM: Homo sapiens | | | |
| 5006088 | <220> FEATURE: | | | |
| 5006089 | <221> NAME/KEY: misc_feature | | | |
| 5006090 | <222> LOCATION: (1)...(3104) | | | |
| 5006091 | <223> OTHER INFORMATION: n = a,t,c or g | | | |
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| 5006099 | ttaactctat aacctctat | ggcaagaatt | tgagaagta aatttatact caggttctaa | 120 |
| 5006100 | tttaatagg gaaggaagaa | gttacagctc | agtgcacat gaagttgaga cagagatgg | 180 |
| 5006101 | gacacctcag ccccacctt | ctggAACAGG | aaagatgatt ggagagggag cacaggtcg | 240 |
| 5006102 | cgtggaaaga gggcatgtt | ggacatcg | gtgggggtgtt ctccccaccc cctcacatta | 300 |
| 5006103 | tgcctacacg aacacagaca | catgcaggt | cccttgacaa aacaaagtca gggttctca | 360 |
| 5006104 | agtccacaaag ggaaggcag | gaacaactct | tgcctctcg tcccacacaa ggcagctgtc | 420 |
| 5006105 | tcacacttta caagctgtg | gagacacatc | agacccctgg gcaactgtcac tgcttgac | 480 |
| 5006106 | ctgaagagcc ctggcactg | tcactgttgc | cagcctgaga gtagctccct ctttttat | 540 |
| 5006107 | ctgagcttctt cctcccttac | atcacagcag | cgaccacagc tccagtgatc acagctcaa | 600 |
| 5006108 | agagaaccag gccagcaatg | atgcccacga | tggggatggt gggctggaa gacggctccc | 660 |
| 5006109 | atctcagggt gaggggctt | ggcaaaaccct | catgtgcac atggcagggt tatctctgt | 720 |
| 5006110 | cctgtccaga aggcaccacc | acagccccc | acttctggaa gttccatcc cctgcaggcc | 780 |

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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:26

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

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|--------------|--|------|
| 5006111 | tggctccac gagctccgtg tcctgggtct ggtcctcccc atcccgtgc caggtca | 840 |
| 5006112 | tgtatctccgc agggtagaaag ctcaaggccc agcacctcg ggtggcttca tggtcaga | 900 |
| 5006113 | cagcgtggtg agtcatatgc gttttgggg cggtccgtcg ctgcagcg tccttccgt | 960 |
| 5006114 | tctccaggta tctcgagc cactccacgc acgtgccctc caggttaggc ctcaactgct | 1020 |
| 5006115 | ccgcctcatg ggccgcctcc cacttgtctg tgggtggctg agtgcctatg tccgcgcgg | 1080 |
| 5006116 | tccaagagcg caggtcctct ttcaaggcga tgtaatcctt gccgtcgtag gcgtactgg | 1140 |
| 5006117 | ggtacccgcg gaggaaagcgc cagtccgacc ccacgtcgca gccatacatc ctctggacgg | 1200 |
| 5006118 | tgtgagaacc ggcctcgctc tgggtgttagt agccgcgcag ggtccccagg tccactcggt | 1260 |
| 5006119 | gagtctgtga gtgggccttc acttccgtg tctccctc ccaatactcc ggaccctct | 1320 |
| 5006120 | gctctatcca cggcgcggc ggctccatcc tctggctcgc ggcgtcgctg tcgaaccgca | 1380 |
| 5006121 | cgaactcggt gtcgtccacg tagcccactg cgatgaagcg gggctcccg cggccggcc | 1440 |
| 5006122 | gggacacgga tgtgaagaaa tacctcatgg agtgagagcc cgcccaggc tgggtcagg | 1500 |
| E--> 5006123 | ccagagcccc cgagagtagc aggacgaggg ttcggggcgc catgacsnei ptsomohctc | 1560 |
| 5006124 | acattatgcc tacacgaaca cagacacatg caggtgcctt tgcagaaaca aagtcaagg | 1620 |
| 5006125 | tcttcaagtc acaaaggaa gggcaggaac aactcttgc tcttcagtc acacaaggca | 1680 |
| 5006126 | gctgtctcac actttacaag ctgtgagaga cacatcgag ccctgggcac tgcactgct | 1740 |
| 5006127 | tgcagcctga gagtagctcc tccttttct atctgagctc ttcctctcc acatcacagc | 1800 |
| 5006128 | agcgaccaca gctccagtga tcacagctcc aaagagaacc agggcagcaa tgatgcccac | 1860 |
| 5006129 | gatggggatg gtgggtggg aagacggctc ccatttcagg gtgagggct tggcaaaacc | 1920 |
| 5006130 | ctcatgctgc acatggcagg tttatctctg tcctgtcca gaaggcacca ccacagccgc | 1980 |
| 5006131 | ccacttctgg aaggttccat cccctgcagg cctggcttcc acgagctccg tgcctgggt | 2040 |
| 5006132 | ctggctctcc ccattccgcgt gccaggtcag tgcgtatcc gcaggtaga agtcaggc | 2100 |
| 5006133 | ccagcacctc agggtgcgtt catggtcaga gacagcgtgg tgagtcatat gcttttggg | 2160 |
| 5006134 | ggcgtccgtg cgctgcagcg tctccttccc gttctccagg tatctgcgg gccactccac | 2220 |
| 5006135 | gcacgtgccc tccaggtagg ctctcaactg ctccgcaca tggccgcct cccacttgc | 2280 |
| 5006136 | cttgggtgtc tgagctgcca tggccgcgc ggtccaaagag cgcaaggctt cttcaggc | 2340 |
| 5006137 | gatgtaatcc ttgcgtcg aggcgtactg gtggtaaccg cgagggaa gccagtccga | 2400 |
| 5006138 | ccccacgtcg cagccataca tcctctggac ggtgtgagaa ccggcctcgc tctggttgt | 2460 |
| 5006139 | gtagccgcgc agggccccaa ggtccactcg gtcaatctgt gatggggct tcactttccg | 2520 |
| 5006140 | tgtctcccccg tcccaatact cggaccctc ctgtctatac caccggcgc gggctccat | 2580 |
| 5006141 | cctctggctc gggcgctgt tcaggcgat gtaatcttg ccgtcgtagg cgtactgg | 2640 |
| 5006142 | gtaccgcgg aggaagcgcc agtccgacc cagtcgcag ccatacatcc tctggacgg | 2700 |
| 5006143 | gtgagaaccg tcctcgctc gttgttagt gccgcgcagg gtcccccagg tgcgtcg | 2760 |
| 5006144 | agtctgtgag tgggcctca cattccgtgt gtccggte caataactcg gcccctctg | 2820 |
| 5006145 | ctctatccac ggcgcggcgt gtcctatcc tcggctcg gctcgctgt cgaaccgcac | 2880 |
| 5006146 | gaactgcgtg tcgtccacgt agcccacggc gatgaagcg ggtccccggc gggccggcc | 2940 |
| 5006147 | ggacacggag gtgtagaaat acctcatgga gtgggagccc gcccaggct ggtcaggc | 3000 |
| 5006148 | caggcccccc gagagttagca ggacgagggt tcggggcgc atgacggcca tcctcg | 3060 |
| 5006149 | ctggggagaa tctgagtcgg ggtgggtgcg tgcggactt agaa | 3104 |
| 5033063 | <210> SEQ ID NO: 149925 | |
| 5033064 | <211> LENGTH: 1166 | |
| 5033065 | <212> TYPE: DNA | |
| 5033066 | <213> ORGANISM: Homo sapiens | |
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| 5033070 | <222> LOCATION: (1)...(1166) | |
| 5033071 | <223> OTHER INFORMATION: n = a,t,c or g | |
| 5033077 | <400> SEQUENCE: 149925 | |
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RAW SEQUENCE LISTING DATE: 07/18/2003
PATENT APPLICATION: US/10/084,643B **TIME:** 15:59:27

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

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| 5033079 | gctgtgaaaa acctctgtt gaaaaatccc actgcattgc cgaagtggaa aatgatgaga | 120 |
| 5033080 | tgcctgctga cttgccttca ttagctgctg attttggta aagtaaggat gtttgc当地 | 180 |
| 5033081 | actatgctga ggc当地aggat gtcttcctgg gcatgtttt gtatgaatat gcaagaaggc | 240 |
| 5033082 | atccctgatta ctctgtcgta ctgctgctga gacttgccaa gacatatgaa accactctag | 300 |
| 5033083 | agaagtgctg tgccgctgca gatcctcatg aatgctatgc caaagtgttc gatgaattta | 360 |
| 5033084 | aacctcttgtt ggaagagcct cagaatttaa tcaaacaaaa ttgnagctt ttgagcagc | 420 |
| E--> 5033085 | ttggagagta caaattccag qiaqtttcca agtttagtgc agatcttace aaagtccaca <i>invalid</i> | 480 |
| 5033086 | cgaatgctg ccatggagat ctgcttgaat gtgctgatgc caggcggac cttgc当地 | 540 |
| 5033087 | atatctgtga aaatcaagat tcgatctcca gtaaaactgaa ggaatgctgt gaaaaaccc | 600 |
| 5033088 | tgttggaaaa atccccactgc attgccgaag tggaaaatga tgagatgcct gctgacttgc | 660 |
| 5033089 | cttcatttagc tgctgatttt gttgaaagta aggtgtttt caaaaactat gctgaggca | 720 |
| 5033090 | agatgtctt cctggccatg tttttgtatg aatatgcaag aaggcatcct gattactctg | 780 |
| 5033091 | tcgtgctgct gctgagactt gccaagacat atgaaaccac tctagagaag tgctgtccg | 840 |
| 5033092 | ctgcagatcc tcatgaatgc tatgccaaag tggtcgatga atttaaacct cttgtgaaag | 900 |
| 5033093 | agcctcagaa tttaatcaaa caaaattgtg agcttttga gcagcttggaa gagtacaat | 960 |
| 5033094 | tccagaatgc gctattagtt cgtagccaa agaaagatacc ccaagtgtca actccaaactc | 1020 |
| 5033095 | ttgttagaggt ctcaagaaaa ccttagaaaa gtggccagca aatgtgtaa acatcctgaa | 1080 |
| 5033096 | agcaaaaaga aatgccctgt tgcaaaaaa ctatctatcc gtggcctgaa accagttatg | 1140 |
| 5033097 | tntgtttgc atgaaaaaaaaa cnccgt | 1166 |

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003

TIME: 15:59:49

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

L:146 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
M:341 Repeated in SeqNo=2
L:200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:120
L:233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:660
M:341 Repeated in SeqNo=5
L:383 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
M:341 Repeated in SeqNo=11
L:412 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:360
M:341 Repeated in SeqNo=12
L:477 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
M:341 Repeated in SeqNo=14
L:812 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:420
L:839 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:360
L:933 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:2460
M:341 Repeated in SeqNo=23
L:1019 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:120
M:341 Repeated in SeqNo=25
L:1073 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:540
M:341 Repeated in SeqNo=27
L:1149 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:240
L:1200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:240
M:341 Repeated in SeqNo=31
L:1244 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:1080
L:1322 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:240
M:341 Repeated in SeqNo=35
L:1435 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:360
L:1492 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:540
L:1703 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0
M:341 Repeated in SeqNo=49
L:1765 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0
M:341 Repeated in SeqNo=51
L:1799 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:360
M:341 Repeated in SeqNo=52
L:2071 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
M:341 Repeated in SeqNo=61
L:2136 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:360
L:2159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:120
M:341 Repeated in SeqNo=64
L:2184 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0
M:341 Repeated in SeqNo=65
L:2387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:360
M:341 Repeated in SeqNo=73
L:2710 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:85 after pos.:360
L:3035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:93 after pos.:0
M:341 Repeated in SeqNo=93
L:3062 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:94 after pos.:0
M:341 Repeated in SeqNo=94
L:3179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:96 after pos.:2160

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/084,643B

DATE: 07/18/2003
TIME: 15:59:49

Input Set : E:\pt_SEQ.502.txt
Output Set: N:\CRF4\07182003\J084643B.raw

L:3516 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106 after pos.:0
L:3596 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:109 after pos.:420
L:2955329 M:254 E: No. of Bases conflict, LENGTH:Input:2220 Counted:2219 SEQ:90222
M:254 Repeated in SeqNo=90222
L:2955333 M:252 E: No. of Seq. differs, <211> LENGTH:Input:2401 Found:2400 SEQ:90222
L:3979361 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4884736 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4951754 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4957275 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:7
L:4983769 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
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L:5004862 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:4
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L:5006010 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:14
L:5006123 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:5
L:5033085 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:104 M:203 E: No. of Seq. differs, <160> Number Of Sequences:Input (158) Counted (158931)



RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/084,643A
Source: OIPE
Date Processed by STIC: 5/7/2003

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- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
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Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<http://www.uspto.gov/ebc/efs/downloads/documents.htm>), EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
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Revised 04/24/2003



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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/084,643A

DATE: 05/07/2003
TIME: 14:43:54

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6 <110> APPLICANT: Tang, Y. Tom
7           Asundi, Vinod
8           Drmanac, Radoje T.
11 <120> TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES
14 <130> FILE REFERENCE: 21272-502
16 <140> CURRENT APPLICATION NUMBER: 10/084,643A
17 <141> CURRENT FILING DATE: 2002-02-26
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| 2955313 | ccttccgcaa ccacatctgc atgacgttt agctgttag catgaacctc tatgagctca | 1260 |
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| 2955321 | ccaaaattt tgtgagctcc aagggttatac cccgttactg cactgtcagc actctctcag | 1740 |
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| 2955324 | taaaacagtgt ttttagagtgg gatcctgcag tgcgcgtatgc cccaggccag gcttgcggc | 1920 |
| 2955325 | accctggct gaggaggcgg ttgccaaagc ctccccccgg ggagaaaaacg tcagtggaaa | 1980 |
| 2955326 | ggataactga gaccccggt gctatcacat ctatatccaa ttaccttcca ccttcttagt | 2040 |
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| 3979367 | cccaactact ggcaccagat gggacaaaaa gccttaca tccacatcca gggctctgac | 540 |
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R.4

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| 4884739 | ctatTTTtat cattatttgg ggTTGAAAAA ATTTTTTT tacaccttct aatttctta | 780 |
| 4884740 | tttctcaaaag cagataatta ttctgtgtga aaatgttttcc ttttttaat ttaaggTTTA | 840 |
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| 4957211 | gaaaaatcta aaaaccaagt gaaagaaaaa tactcatgg tacttgaagt ggaaccaaata | 240 | |
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| 4957213 | aaaatctcca aggaaggtgt accgtcttg gcctgtgaat ggtctcaact aacccttca | 360 | |
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| 4957238 | ctttctcag acaatggaaa taatttgtc ttccaagtag ctaatgaaag gaataatott | 1860 | |
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P.b

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PATENT APPLICATION: US/10/084,643A **TIME:** 14:47:51

Input Set : E:\pt_SEQ.502
Output Set: N:\CRF4\05072003\J084643A.raw

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/084,643A

DATE: 05/07/2003

TIME: 14:47:51

Input Set : E:\pt SEQ.502

Output Set: N:\CRF4\05072003\J084643A.raw

RAW SEQUENCE LISTING

DATE: 05/07/2003
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Input Set : E:\pt_SEQ.502
Output Set: N:\CRF4\05072003\J084643A.raw

| | | | | | | | |
|---------|-------------|--------------|--------------|--------------|-------------|-------------|-------|
| 4957348 | aagataactta | ttaaagttaaac | agtagcatgt | ctaacagccta | ttcctaccat | tctgatgagg | 8460 |
| 4957349 | tatataaatga | ttcaggatata | ctctcaaaaa | ataaaacttga | ttctggatt | gagccagtat | 8520 |
| 4957350 | tgaagaatgt | tgaagatcaa | aaaacacta | gttttccaa | agtaatatcc | aatgtaaaag | 8580 |
| 4957351 | atgc当地 | atacccacaa | actgtaaaatg | aagatatttgc | cgttgaggaa | cttgc当地 | 8640 |
| 4957352 | gcttc当地 | ctgcaaaaaat | aaaatgcag | ccattaaattt | gtccatatct | aatagtaata | 8700 |
| 4957353 | attttggatgt | aggccacctt | gcattttagga | tagccagtgg | taaaatcggt | tgtgttccac | 8760 |
| 4957354 | atgaaacaat | taaaaaagtg | aaagacatata | ttacagacag | tttgc当地 | gtaattaagg | 8820 |
| 4957355 | aaaacaacga | gaataaatca | aaaatttgc | aaacgaaaat | tatggcagg | tgttacgagg | 8880 |
| 4957356 | cattggatga | ttcagaggat | attcttcata | actctctaga | taatgtgaa | tgttagcacgc | 8940 |
| 4957357 | attcacataa | ggttttgtct | gacattcaga | gtgaagaaat | tttacaacat | aacccaaaata | 9000 |
| 4957358 | tgtctggatt | ggagaaagtt | tctaaaatata | cacccgttga | tgttagtttgc | gaaacttcag | 9060 |
| 4957359 | atataatgtaa | atgtgtata | gggaagctt | ataagtca | ctcatctgc | aatacttgc | 9120 |
| 4957360 | ggatttttag | cacagcaagt | ggaaaatctg | tccaggtatc | agatgcttca | ttacaaaacg | 9180 |
| 4957361 | caagacaagt | gttttctgaa | atagaagata | gtaccaagca | agtctttcc | aaagtattgt | 9240 |
| 4957362 | ttaaaagtaa | cgaacattca | gaccagctca | caagagaaga | aaatactgct | atacgactc | 9300 |
| 4957363 | cagaacattt | aatatccccaa | aaaggctttt | catataatgt | ggtaaattca | tctgcttct | 9360 |
| 4957364 | ctggatttag | tacagcaagt | ggaaagcaag | tttccatttt | agaaagtcc | ttacacaaag | 9420 |
| 4957365 | ttaaggggat | gttagagggaa | tttgatttaa | tcagaactga | gcatagtctt | cactattcac | 9480 |
| 4957366 | ctacgtctag | acaaaatgtt | tcaaaaatac | ttccctgtgt | tgataagaga | aacccagagc | 9540 |
| 4957367 | actgtgtaaa | ctcagaaaatg | aaaaaaacct | gcagtaaaga | attnaattta | tcaaataact | 9600 |
| 4957368 | taaatgttga | aggtggttct | tcagaaaata | atcactctat | taaagtttct | ccatatctct | 9660 |
| 4957369 | ctcaatttca | acaagacacaa | caacagttgg | tattaggaac | caaagtctca | cttggtgaga | 9720 |
| 4957370 | acattcatgt | tttggggaaaa | gaacaggctt | cacctaaaaa | cgtaaaaatg | gaaattggta | 9780 |
| 4957371 | aaactgaaac | tttttctgtat | gttcctgtga | aaacaaaatata | agaagtttgc | tctacttact | 9840 |
| 4957372 | ccaaagattc | agaaaaactac | tttgc当地 | aagcagtaga | aattgc当地 | gcttttatgg | 9900 |
| 4957373 | aagatgtat | actgacagat | tctaaactgc | caagtc当地 | cacacattct | cttttcat | 9960 |
| 4957374 | gtccc当地 | tgaggaaaatg | ttttgtca | attcaagaaat | tggaaaaaga | agaggagagc | 10020 |
| 4957375 | cccttatctt | atgtggagaa | ccctcaatca | aaagaaaactt | attnaattga | tttgacagga | 10080 |
| 4957376 | taatagaaaa | tcaagaaaaaa | tccttaaagg | cttccaaaaag | cactccagat | ggcacaataa | 10140 |
| 4957377 | aagatcgaag | atgtttgtt | catcatgtt | ctttagagcc | gattacgtt | gtacccttcc | 10200 |
| 4957378 | gcacaactaa | ggAACGTCAA | gagatacaga | atccaaattt | tacccgaccc | ggtaaagaat | 10260 |
| 4957379 | ttctgtctaa | atctcatttgc | tatgaacatc | tgactttgg | aaaatcttca | agcaatttag | 10320 |
| 4957380 | cagtttcagg | acatccattt | tatcaagttt | ctggtaacaa | gaatggaaaa | atgagaaaaat | 10380 |
| 4957381 | tgattactac | aggcagacca | acccaaatgtt | tttgc当地 | tttgc当地 | aatcacatt | 10440 |
| 4957382 | ttcacagagt | tgaacagtttgc | tttgc当地 | ggggaaacaga | caaaagcaaa | caaaagcaaa | 10500 |
| 4957383 | acattgtatgg | acatggctct | gatgtatgt | aaaataagat | taatgtaca | gagattcatc | 10560 |
| 4957384 | agtttaacaa | aaacaactcc | aatcaagcag | cagctgttac | tttgc当地 | tgtgaagaag | 10620 |
| 4957385 | aacctttaga | tttaatttaca | agtttgc当地 | atgccc当地 | tatacaggat | atgc当地 | 10680 |
| 4957386 | agaagaaaaca | aaggcaacgc | gtcttccac | agccaggcag | tctgtatctt | gaaaaacat | 10740 |
| 4957387 | ccactctgc | tcaaatctct | ctgaaagcag | cagtaggggg | ccaagttccc | tctgc当地 | 10800 |
| 4957388 | ctcataaaaca | gctgtatacg | tatggcgtt | cttccaaatgtt | cataaaaaatt | aacagcaaaa | 10860 |
| 4957389 | atgc当地 | tttgc当地 | cacactgtt | attatgttgg | taaggaaatgt | ttatggactg | 10920 |
| 4957390 | gaaaaggaat | acagttggct | gatggtggat | ggctc当地 | cttccaaatgt | gaaaaggctg | 10980 |
| 4957391 | gaaaagaaga | attttatagg | gctctgtgt | acgttacaggc | cacata | g | 11027 |
| 4983741 | <210> | SEQ ID NO: | 148559 | | | | |
| 4983742 | <211> | LENGTH: | 1364 | | | | |
| 4983743 | <212> | TYPE: | DNA | | | | |
| 4983744 | <213> | ORGANISM: | Homo sapiens | | | | |
| 4983750 | <400> | SEQUENCE: | 148559 | | | | |

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Input Set : E:\pt_SEQ.502
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| | | |
|--------------|--|------|
| 4983751 | acccagccag cacagcagca gcagcctgc ctctatgaga tcaaacagt tctggagtgt | 60 |
| 4983752 | gcccagaacc agggtgacat caagctctgt gagggttca atgaggtgct gaaacagtgc | 120 |
| 4983753 | cgacttgcaa acggattggc ctaatgaaga agttcaacct ggagagatgg aaaatcagct | 180 |
| 4983754 | ctcataacta agttaattta gtataaaaat agaattgata gtgagggtat gcagcctgc | 240 |
| 4983755 | ctctatgaga tcaaacagt tctggagtgt gcccagaacc agggtgacat caagctctgt | 300 |
| 4983756 | gagggttca atgaggtgct gaaacagtgc cgacttgcaa acggattggc ctaatgaaga | 360 |
| 4983757 | agtcaacct ggagagatgg aaaatcagct ctcataacta agttaattta gtataaaaat | 420 |
| 4983758 | tagaattgat agtgagggt ataaaagttt aaccatcagt taaacctctc cctgtcatc | 480 |
| 4983759 | cctagctcc ctigcttcag aattttaaaat gaaagtgggg gtgtccctac tctgtagaat | 540 |
| 4983760 | ctgggactgg gcaaatgtt gtgtggcctc cttaaactag ctgttatgtt atgattttat | 600 |
| 4983761 | tctttgtaa ttaatttagaa taaagtctt ttcttccaaa ctcaggaaaa cccagccccag | 660 |
| 4983762 | caccagccag cagccagcct tgccctctat gagatccaaa ccagttccct gggagtgtgc | 720 |
| 4983763 | ccccagaacc aggggtgaca tccaagcccc tgtgagggtt tccaatgagg tgccctgaaac | 780 |
| 4983764 | agtggccgac ttgcaaaacc ggatttgctt aatgaagaag tttcaaccct ggagagatgg | 840 |
| 4983765 | aaaatcagct ctcataacta agttaattta gtataaaaat tagaattgat agtgagggt | 900 |
| 4983766 | ataaaagtttt aaccatcagg ttaaacctct ccctgtcatt ccctagcttc ccttgcttcg | 960 |
| 4983767 | agaattgaaa ttggaagtgg ggggtgtccc tactctgttag aatctggac ttgggcaaat | 1020 |
| 4983768 | gttttgtgtg gcctccctaa actagctgtt atgttatgtat ttttattctt tgtgagttaa | 1080 |
| E--> 4983769 | tttagacacaa agtcattttc ttccaaaaaaaaaa aaatagctct cataactaaag ttaattttagt | 1140 |
| 4983770 | ataaaaataag aattgatagt gagggtataa agttaacca tcagttaaac ctctccgtgc | 1200 |
| 4983771 | atccctagct tccttgcctc agaattgaaa ttggaagtgg ggggtgtccc tactctgttag | 1260 |
| 4983772 | aatctggac tggcaaatg ttgtgtggg ctccctaaac tagctgttaa gttatgatt | 1320 |
| 4983773 | taatctttgt gagttattaa gataaagtcc tttcttccaaa aaaa | 1364 |
| 5004829 | <210> SEQ ID NO: 149073 | |
| 5004830 | <211> LENGTH: 2353 | |
| 5004831 | <212> TYPE: DNA | |
| 5004832 | <213> ORGANISM: Homo sapiens | |
| 5004834 | <220> FEATURE: | |
| 5004835 | <221> NAME/KEY: misc_feature | |
| 5004836 | <222> LOCATION: (1)...(2353) | |
| 5004837 | <223> OTHER INFORMATION: n = a,t,c or g | |
| 5004843 | <400> SEQUENCE: 149073 | |
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| 5004845 | cagacctggg cgggctccca ctccatgagg tatttctaca ctccctgtc ccggcccccgc | 120 |
| 5004846 | cgcggggagc cccgcttcat cggcgtggc tacgtggacg acacgcagtt cgtcggttc | 180 |
| 5004847 | gacagcgacg cccgagccca gaggatggag cccgcggcgc cgtggataga gcaggagggg | 240 |
| 5004848 | ccggagtatt gggaccggaa cacacggat gtgaaggccc agtcacagac tgaccgagt | 300 |
| 5004849 | gacctggggc ccctcgccgg ctactacaac cagacgcagg ccgttctca caccatccag | 360 |
| 5004850 | atgatgtatg gctgcacgt ggggtcgac gggcgcttcc tccgcggta ccggcaggac | 420 |
| 5004851 | gcctacgacg gcaaggatta catcgccctg aaagaggacc tgcgtcttgc gaccgcggcg | 480 |
| 5004852 | gacatggcag ctcagaccac caagcacaag tgggaggcgg cccatgtggc ggagcagtgg | 540 |
| 5004853 | agagcttacc tggaggcgc acgtcgatgg tggctccca gatacctggaa gaacgggaag | 600 |
| 5004854 | gagacgctgc agcgcacggc cccccccaaa acgcataatga ctcaccacgc tgcgtctgac | 660 |
| 5004855 | catgaagcca ccctggggatg ctggggccctg agttctacc ctgcggagat cacactgacc | 720 |
| 5004856 | tggcagcggg atggggaggaa ccagacccag gacacgcggc tcgtggagac caggcctgca | 780 |
| 5004857 | ggggatggaa cttccagaa gtgggtggct gtgggtgtgc ctttggaca ggagcagaga | 840 |
| 5004858 | tacacctgcc atgtgcacca tgagggtttt cccaaaggcccc tcacccttag atggggccg | 900 |
| 5004859 | tcttcccagc ccaccatccc catcgccggc atcattgtgt gcctgggtct ctttggagct | 960 |
| 5004860 | gtgatcaactg gagctgtgtt cgctgtgtt atgtggagga ggaagagctc agatagaaaa | 1020 |

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Input Set : E:\pt_SEQ.502
Output Set: N:\CRF4\05072003\J084643A.raw

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|--------------|---|------|
| E--> 5004861 | ggagggagct actctcaggc tgcaaggagt gacagtgcggc agggctctga tttgtctch | 1080 |
| E--> 5004862 | mosapiensg tcataqccccc ccgaaccctc gtcctgtatc tctgggggc tctggccctg | 1140 |
| 5004863 | accagaccc gggcggttc tcaactccatg aggtatttct tcacatccgt gtccccggcc | 1200 |
| 5004864 | ggccgcgggg agccccctt catcgactg ggctacgtgg acgacacgcg gttcggtcg | 1260 |
| 5004865 | ttcgacagcg acgcccggag ccagaggatg gagccgcggg cgccgtggat agagcaggag | 1320 |
| 5004866 | gttccggagt attgggacgg ggagacacgg aaagtgaagg cccactcaca gactcaccga | 1380 |
| 5004867 | gtggacctgg ggaccctcg cggtactac aaccagagcg agggcggttc tcacaccgtc | 1440 |
| 5004868 | cagaggatgt atggctgcga cgtgggtcg gactggcgt tcctccggg gtaccaccag | 1500 |
| 5004869 | tacgcctacg acggcaagga ttacatcgcc ctgaaagagg acctgcgtc ttggaccgcg | 1560 |
| 5004870 | gcccgcacatgg cagctcagac caccacggc aagtgggggg cgcccatgaa ggcggagcag | 1620 |
| 5004871 | tttagagcct acctgggggg cacgtgcgtg gagtggtcc gcagataacct ggagaacggg | 1680 |
| 5004872 | aaggagacgc tgcagcgcac ggacgccccca aaaacgcata tgactcacca cgctgtctct | 1740 |
| 5004873 | gaccatgaag ccaccctggat gtgtggggcc ctgagtttcc accctgcggg gatcacactg | 1800 |
| 5004874 | acctggcggc gggatggggg ggaccacggc caggacacgg agctcgtgg gaccaggcct | 1860 |
| 5004875 | gcaggggatg gaaccttcca gaagtggcg gctgtgggtt tgccctctgg acaggagcag | 1920 |
| 5004876 | agatacacct gccatgtcga gcatgagggtt ttgccaagc ccctcaccct gagatgggg | 1980 |
| 5004877 | ccgtcttccc agccaccat cccatcggt ggcattttt ctgcctgtt tcttttggaa | 2040 |
| 5004878 | gctgtatca ctggagctgt ggtcgctgt gtgtatgtgg gggagaa gtcagataga | 2100 |
| 5004879 | aaaggaggaa gctactctca ggctgcggc agtgcacgtg cccaggcgtc tgatgtgtct | 2160 |
| 5004880 | ctcacagctt gtaaagtgtg agacagctgc ttgtgtggg actgagaggc aagagtttt | 2220 |
| 5004881 | cctgcccttc ctttgtgac ttgaagaacc ctgactttgt ttctgcggaa gcacctgcgt | 2280 |
| 5004882 | gtgtctgtgt tcgtgttaggc ataatgtgag gggatggggg gaccacccca ccccatgtc | 2340 |
| 5004883 | caccatgacc ctc | 2353 |
| 5005977 | <210> SEQ ID NO: 149104 | |
| 5005978 | <211> LENGTH: 2615 | |
| 5005979 | <212> TYPE: DNA | |
| 5005980 | <213> ORGANISM: Homo sapiens | |
| 5005982 | <220> FEATURE: | |
| 5005983 | <221> NAME/KEY: misc_feature | |
| 5005984 | <222> LOCATION: (1)...(2615) | |
| 5005985 | <223> OTHER INFORMATION: n = a,t,c or g | |
| 5005991 | <400> SEQUENCE: 149104 | |
| 5005992 | atggccgtca tggcgccccg aaccctcgct ctgtactct cggggccct ggccctgacc | 60 |
| 5005993 | cagacctggg cgggtccca ctccatgagg tatttctaca cttccgtgtc cggccccggc | 120 |
| 5005994 | cgcggggagc cccgtttcat cgccgtgggc tacgtggacg acacgcgtt cgtcggttc | 180 |
| 5005995 | gacagcgcacg ccgcggacca gaggatggg cccggggcgc cgtggataga gcaggagggg | 240 |
| 5005996 | ccggaggatt gggaccggaa cacacggat gtgaaggccc actcacacgc tgaccgagtg | 300 |
| 5005997 | gacctggggc ccctgcggg ctactacaac cagacgcggg cccgttctca caccatccag | 360 |
| 5005998 | atgtatgtatg gctgcgcacgt ggggtcgac gggcgcttcc tccgcgggtt cccggcaggac | 420 |
| 5005999 | gcctacgcacg gcaaggattt catgcctctg aaagaggacc tgcgtcttgc gaccgcggcg | 480 |
| 5006000 | gacatggcggc ctcagaccac caagcacaag tggggggccg cccatgtggc ggacgcgtgg | 540 |
| 5006001 | agagcctacc tggaggggcac gtgcgtggag tggctccgca gatacctgaa gaacggaaag | 600 |
| 5006002 | gagacgcgtc acgcacggc cgcggccaaa acgcataatgaa ctcaccacgc tgcgtctgac | 660 |
| 5006003 | catgaagcca ccctgagggtt ctggggccctg agtttctacc ctgcggagat cacactgacc | 720 |
| 5006004 | tggcagcggg atggggagga ccagacccag gacacggac tcgtggagac caggcctgc | 780 |
| 5006005 | ggggatggaa cttccagaa gtgggtggct gtgggtggc cttctggaca ggacgcggaga | 840 |
| 5006006 | tacacctgccc atgtgcacca tgagggtttt cccaaaggcccc tcaccctgatggggacccg | 900 |
| 5006007 | tctccccagc ccaccatccc catgtggggc atcattgtgt gcctgggttct cttggagct | 960 |
| 5006008 | gtgtatcaactg gagctgtgtt cgctgtgtt atgtggagga ggaagacgtc agatagaaaa | 1020 |

P.||

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PATENT APPLICATION: US/10/084,643A

DATE: 05/07/2003
TIME: 14:47:54

Input Set : E:\pt_SEQ.502
Output Set: N:\CRF4\05072003\J084643A.raw

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|--------------|--|------|
| E--> 5006009 | ggagggagct actctcaggc tgcaaggagt gacagtgcggc agggtctgta ttttgtcttola | 1080 |
| E--> 5006010 | naagenetnm pltecdsle nhcmosapien satggccgt catggcgccc cgaaccctcc | 1140 |
| 5006011 | tcttgcatac ctcgggggcc ctggccctga cccacacctg ggccggctcc cactccatga | 1200 |
| 5006012 | gttatttctt cacatccgtg tcccgccccg gcagtggaga gcccccttc atcgcatgg | 1260 |
| 5006013 | gctacgtgga cgacacgcag ttctgtcggt tcgacagcga cgccgcgagc cagaggatgg | 1320 |
| 5006014 | agccgcgggc gccgtggata gacggaga ggcctgagta ttgggaccag gagacacgga | 1380 |
| 5006015 | atgtgaaggc ccagtcacag actgaccgag tggaccttgg gaccctgcgc ggctactaca | 1440 |
| 5006016 | accagagcga ggccgggtct cacaccatcc agataatgta tggctgcac gtggggtcgg | 1500 |
| 5006017 | acgggcccgtt cctccgcggg tatgaacagc acgcctacga cggcaaggat tacatcgccc | 1560 |
| 5006018 | tgaacgagga cctgcgtct tggaccgcgg cggacatggc ggctcagatc acccagcga | 1620 |
| 5006019 | atgtggaggc ggcccgttgg gcggagcgt tgagagccta cctggagggc acgtgcgtgg | 1680 |
| 5006020 | atgtggctccg cagatacctg gagaacggga aggagacgt gcagcgcacg gacccccc | 1740 |
| 5006021 | agacacatat gacccaccac cccatctctg accatgaggc caccctgagg tgctggggcc | 1800 |
| 5006022 | tgggttctta ccctgcggag atcacactga cttggcagcg ggatggggag gaccagaccc | 1860 |
| 5006023 | aggacacggc gctcgiggag accaggcctg cagggatgg aacctccag aagtggcg | 1920 |
| 5006024 | ctgtgggtgt gccttcttga gaggagcaga gatacacctg ccatgtgcag catgagggtc | 1980 |
| 5006025 | tgcccaagcc ctcacccctg agatgggagc tgttccca gcccaccat cccatcggt | 2040 |
| 5006026 | gcatcattgc tggcttgggtt ctcccttggag ctgtgatcac tggagctgtg gtcgctgcgg | 2100 |
| 5006027 | tgtatgtggag gaggaaagc tcagatagaa aacggacgc cccaaaacg catatgactc | 2160 |
| 5006028 | accacgtgt ctctgaccat gaagccaccc tgaggtgtc ggccttgagc ttctaccctg | 2220 |
| 5006029 | cggagatcac actgaccctgg cagcggatg gggaggacca gaccaggac acggagctcg | 2280 |
| 5006030 | tggagaccag gcctgaaggg gatggAACCT tccagaagtg ggccgtgtg gtgggtgcctt | 2340 |
| 5006031 | ctggacagga gcagagatac acctgcctat tgcagcatga gggtttgc aagccctca | 2400 |
| 5006032 | ccctgagatg ggagccgtct tcccgccca ccatccccat cgtggcatac attgctggcc | 2460 |
| 5006033 | tgggttctt tggagctgtg atcaactggag ctgtggcgc tgctgtatg tggaggagga | 2520 |
| 5006034 | agagctcaga tagaaaagga gggagctact ctcaggctgc aagcagtgc agtgcccagg | 2580 |
| 5006035 | gctctgatgt gtctctcaca gcttgtaaag tgtga | 2615 |
| 5006083 | <210> SEQ ID NO: 149106 | |
| 5006084 | <211> LENGTH: 3104 | |
| 5006085 | <212> TYPE: DNA | |
| 5006086 | <213> ORGANISM: Homo sapiens | |
| 5006088 | <220> FEATURE: | |
| 5006089 | <221> NAME/KEY: misc_feature | |
| 5006090 | <222> LOCATION: (1)...(3104) | |
| 5006091 | <223> OTHER INFORMATION: n = a,t,c or g | |
| 5006097 | <400> SEQUENCE: 149106 | |
| 5006098 | gaaggttctc atgtgttcca tttatTTTGT ctctcaaatt ttaggaatct ttcctttaa | 60 |
| 5006099 | ttaactctat aacctctat ggcagaatt tgagaaatg aatttataact caggTTCTAA | 120 |
| 5006100 | tttaatagg gaaggaagaa ttacagctc agtgcaccat gaagttgaga cagagatgg | 180 |
| 5006101 | gacacctcag cccacccctt ctggAACAGG aaagatgatt ggagaggag cacaggtcg | 240 |
| 5006102 | cgtggaaaga gggTCATGGT ggacatcggg gtggggTGGT ctccccaccc ctcacatta | 300 |
| 5006103 | tgcctacacg aacacagaca catgcagggt ccttgcaga aacaaagtca gggTTCTCA | 360 |
| 5006104 | agtacacaaag ggaaggcag gaacaactt tgcctctcag tcccacacaa ggcagctgtc | 420 |
| 5006105 | tcacacttta caagctgtg gagacacatc agacccctgg gcaactgtcac tgcttgcc | 480 |
| 5006106 | ctgaagagcc ctgggcactg tcactgtttc cagcctgaga ttagctccct cttttctat | 540 |
| 5006107 | ctgagctt ctcctccac atcacagcag cgaccacagc tccagtgtac acagctccaa | 600 |
| 5006108 | agagaaccag gccagcaatg atgcccacga tggggatggt gggctggaa gacggctccc | 660 |
| 5006109 | atctcagggt gaggggctt ggcaaaacccat catgctgcac atggcagggt tatctctgt | 720 |
| 5006110 | cctgtccaga aggcaccacc acagccgccc acttctggaa gttccatcc cctgcaggcc | 780 |

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RAW SEQUENCE LISTING DATE: 05/07/2003
 PATENT APPLICATION: US/10/084,643A TIME: 14:47:54

Input Set : E:\pt_SEQ.502
 Output Set: N:\CRF4\05072003\J084643A.raw

| | | |
|--------------|---|------|
| 5006111 | tggctccac gagctccgtg tcctgggtct ggtcctcccc atcccgtgc caggtca | 840 |
| 5006112 | tgtatctccgc agggtagaag ctcaaggccc agcacctcag gttggcttca tggtcaga | 900 |
| 5006113 | cagcgtggtg agtcatatgc gtttggggg cgtccgtgc ctgcagcg tccttccgt | 960 |
| 5006114 | tctccaggta tctcgccgac cactccacgc acgtgccctc cagtaggc ctcaactg | 1020 |
| 5006115 | ccgcctcatg ggccgcctcc cacttgtct tgggtgtcg agetgcctg tccgcgcgg | 1080 |
| 5006116 | tccaagagcg caggtccctt ttcaaggcga tgtaatccctt gccgtcgtag gcgtactgg | 1140 |
| 5006117 | ggtacccgcg gaggaaagec cagtcgcacc ccacgtcga gecatacatt ctctggacgg | 1200 |
| 5006118 | tgtgagaacc ggcctcgctc tgggtgttagt agccgcgcag ggtcccccagg tccactcggt | 1260 |
| 5006119 | gagtctgtga gtgggccttc actttccgtg tctcccgctc ccaatactcc ggaccctcct | 1320 |
| 5006120 | gctctatcca cggcgccccgc ggctccatcc tctggctcg ggcgtcgctg tcgaaccgca | 1380 |
| 5006121 | cgaactgcgt gtcgtccacg tagcccaactg cgatgaagcg gggtcccccgg cggccggcc | 1440 |
| 5006122 | gggacacgga tgtgaagaaa tacctcatgg agtgagagcc cgcccaaggc tgggtcaagg | 1500 |
| E--> 5006123 | ccagagcccc cgagagtagc aggacgagggt ttcggggcgc catgacsnei nts mohctc | 1560 |
| 5006124 | acattatgcc tacacgaaca cagacacatg caggtgcct tgcagaaaca aagtcaagggt | 1620 |
| 5006125 | tcttcaggta acaaaggaa gggcaggAAC aactcttgc tctcagtccc acacaaggca | 1680 |
| 5006126 | gctgtctcac acttatacg ctgtgagaga cacatcaag ccctgggcac tgcactgct | 1740 |
| 5006127 | tgcaagccctga gagtagctcc ctccctttct atctgagctc ttcctctcc acatcacagc | 1800 |
| 5006128 | agcgaccaca gctccaggta tcacagctcc aaagagaacc aggccagcaa tgatgcccac | 1860 |
| 5006129 | gatggggatg gtgggtgggg aagacggcgc ccatctcagg gtgaggggct tggcaaaacc | 1920 |
| 5006130 | ctcatgctgc acatggcagg tgtatctctg ctccgttcca gaaggcacca ccacagccgc | 1980 |
| 5006131 | ccacttctgg aaggttccat cccctgcagg cctggcttcc acgagctccg tgcctgggt | 2040 |
| 5006132 | ctgggtctcc ccatcccgct gccaggtagc tggatctcc gcaggtaga agtcagg | 2100 |
| 5006133 | ccagcacctc agggtggtt catggtcaga gacagcgtgg tgagtcatat gctttttgg | 2160 |
| 5006134 | ggcgtccgtg cgctgcacg tctccctccc gttctccagg tatctgcgg gccactccac | 2220 |
| 5006135 | gcacgtgccc tccaggtagg ctctcaactg ctccgcacca tggccgcct cccacttgc | 2280 |
| 5006136 | cttgggtgtc tggatgttcca tggccggcgc ggtcaagag cgcaaggctt cttcagg | 2340 |
| 5006137 | gatgtaatcc ttggcgtcgt aggctactg tggttacccg cggaggaagc gccagtcga | 2400 |
| 5006138 | cccccacgtcg cagccatata tcctctggac ggtgtgagaa cccgcctcg tctgggtgt | 2460 |
| 5006139 | gtagccgcgc agggtcccca ggtccactcg gtcaatctgt gatggggct tcaacttccg | 2520 |
| 5006140 | tgtctccccc tcccaatact cccgaccctc ctgctctatc cacggcgccc gcccgtccat | 2580 |
| 5006141 | cctctggctc gcccgtcgt tcaggcgat gtaatcttgc cgtcgtagg cgtactgg | 2640 |
| 5006142 | gtacccgcgg aggaagcgcc agtccgaccc cacgtcgacg ccatacatcc tctggacgg | 2700 |
| 5006143 | gtgagaaccg tcctcgctct ggtgttaga gccgcgcagg gtcccccagg tgcgtcg | 2760 |
| 5006144 | agtcgtgag tggcccttca cattccgtgt gttccggtcc caatactccg gcccctctg | 2820 |
| 5006145 | ctctatccac ggcgcggcgc gtcctatcc ctggctcg ggcgtcgctgt cgaaccgcac | 2880 |
| 5006146 | gaactgcgtg tcgtccacgt agcccacggc gatgaagcg ggcccccgc gggccggcc | 2940 |
| 5006147 | ggacacggag gtgtaaaaat acctcatgg gttggagccc gcccaggctt gggcagg | 3000 |
| 5006148 | caggcccccc gagagtagca ggacgagggt tcggggcgcc atgacggcca ttcctggcgt | 3060 |
| 5006149 | ctggggagaa tctgagttcc ggtgggtcg tgccgacttt agaa | 3104 |
| 5033063 | <210> SEQ ID NO: 149925 | |
| 5033064 | <211> LENGTH: 1166 | |
| 5033065 | <212> TYPE: DNA | |
| 5033066 | <213> ORGANISM: Homo sapiens | |
| 5033068 | <220> FEATURE: | |
| 5033069 | <221> NAME/KEY: misc_feature | |
| 5033070 | <222> LOCATION: (1)...(1166) | |
| 5033071 | <223> OTHER INFORMATION: 'n' = a,t,c or g | |
| 5033077 | <400> SEQUENCE: 149925 | |
| 5033078 | cgagacctngc caagtatatac tgtaaaaatc aagattcgat ctccagtaaa ctgaagggaaat | 60 |

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④

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/084.643A

DATE: 05/07/2003

TIME: 14:47:56

Input Set : E:\pt SEO.502

Output Set: N:\CBF4\05072003\J084643A.raw

Use of n and/or Δn has been detected in the sequence listing.
Review the sequence listing to insure a corresponding
expansion is presented in the <IN> to <END> section of
the sequence listing.

fyi
Use of n and/or Xaa has been detected in the Sequence Listing.
Review the Sequence Listing to insure a corresponding
explanation is included in the <210> to <223> fields of
each sequence listing if not Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/084,643A

DATE: 05/07/2003

TIME: 14:48:17

Input Set : E:\pt_SEQ.502

Output Set: N:\CRF4\05072003\J084643A.raw

L:146 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
M:341 Repeated in SeqNo=2
L:200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:120
L:233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:660
M:341 Repeated in SeqNo=5
L:383 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
M:341 Repeated in SeqNo=11
L:412 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:360
M:341 Repeated in SeqNo=12
L:477 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
M:341 Repeated in SeqNo=14
L:812 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:420
L:839 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:360
L:933 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:2460
M:341 Repeated in SeqNo=23
L:1019 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:120
M:341 Repeated in SeqNo=25
L:1073 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:540
M:341 Repeated in SeqNo=27
L:1149 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:240
L:1200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:240
M:341 Repeated in SeqNo=31
L:1244 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:1080
L:1322 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:240
M:341 Repeated in SeqNo=35
L:1435 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:360
L:1492 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:540
L:1703 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0
M:341 Repeated in SeqNo=49
L:1765 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0
M:341 Repeated in SeqNo=51
L:1799 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:360
M:341 Repeated in SeqNo=52
L:2071 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
M:341 Repeated in SeqNo=61
L:2136 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:360
L:2159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:120
M:341 Repeated in SeqNo=64
L:2184 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0
M:341 Repeated in SeqNo=65
L:2387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:360
M:341 Repeated in SeqNo=73
L:2710 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:85 after pos.:360
L:3035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:93 after pos.:0
M:341 Repeated in SeqNo=93
L:3062 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:94 after pos.:0
M:341 Repeated in SeqNo=94
L:3179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:96 after pos.:2160

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/084,643A

DATE: 05/07/2003
TIME: 14:48:17

Input Set : E:\pt_SEQ.502
Output Set: N:\CRF4\05072003\J084643A.raw

L:3516 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106 after pos.:0
L:3596 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:109 after pos.:420
L:2955329 M:254 E: No. of Bases conflict, LENGTH:Input:2220 Counted:2219 SEQ:90222
M:254 Repeated in SeqNo=90222
L:2955333 M:252 E: No. of Seq. differs, <211> LENGTH:Input:2401 Found:2400 SEQ:90222
L:3979361 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4884736 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4951754 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:4957275 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:7
L:4983769 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:5004861 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:5004862 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:4
L:5006009 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:5006010 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:14
L:5006123 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:5
L:5033085 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:1
L:104 M:203 E: No. of Seq. differs, <160> Number Of Sequences:Input (158) Counted (158931)